

ABSTRACT

An optical fiber communication system is provided which uses remote pumping that is capable of improving pumping efficiency and reducing a noise figure. A coupler (20) of a linear repeater (18) couples signal light to pumping light outputted from a pumping light source (19). The outputted signal light and pumping light reach a linear repeater (25) through transmission fibers (22 to 24) and remote pumping modules (27F and 27R). A coupler (30) of the linear repeater (25) couples the signal light to the pumping light supplied from a pumping light source (29), to output the signal light and the pumping light to the transmission fiber (24). The remote pumping module (27F) divides the pumping light propagated in the transmission fiber (22), from the signal light. The remote pumping module 27F branches the divided pumping light in two directions with a predetermined ratio. After branching, each of the branched pumping light is coupled to the signal light to be supplied to both ends of an erbium-doped fiber. The remote pumping module (27R) is similar in structure to the remote pumping module (27F).